

CURRENT LITERATURE

BOOK REVIEWS

Physiological plant anatomy

The appearance of a fourth edition of HABERLANDT'S well known work,¹ almost exactly 25 years after the first edition was published, is an indication of the importance of the book and the service it has rendered to the physiological aspect of plant anatomy. The previous edition, reviewed in this journal,² has been completely revised, and the changes, although limited in extent, serve to incorporate the results of more recent investigation. The number of pages has been increased from 616 to 650, and the illustrations from 264 to 291.

Among the additions are sections entitled "Einrichtungen für besondere mechanische Leistungen," which include the discussion of various hairs and hooks functioning as supports of climbing plants; and "Speichergewebe für Atmungsstoffe" and "Speichergewebe für ökologische Zwecke," dealing with certain aspects of the storage tissues of plants, but presenting little new data.

The most important changes appear in the twelfth chapter, entitled "Die Sinnesorgane," which has been entirely rewritten, with the inclusion of much new material. Foremost among the new data are the results of the author's studies on the structure for light perception in leaves. They include the various lens cells or ocelli, as well as various cells below smooth outer surfaces. Several papers presenting these data have already been noted in these pages.³ Both in this chapter and elsewhere in the volume the author maintains his well known teleological interpretation of the data in spite of the opposite trend of modern investigation. Fortunately this does not detract from the importance of his experiments or the accuracy of his data.—GEO. D. FULLER.

MINOR NOTICES

³ **Key to trees.**—The authors⁴ of a *Key to New England trees* have again given us a convenient and reliable pocket manual pertaining to our native

¹ HABERLANDT, G., *Physiologische Pflanzenanatomie*. Vierte, Neubearbeitete, und vermehrte Auflage. Imp. 8vo. xviii+650. *figs.* 291. Leipzig: Wilhelm Engelmann, 1909. *M* 19.

² BOT. GAZ. 38:146-148. 1904.

³ COLLINS, J. FRANKLIN, and PRESTON, HOWARD W., *Illustrated key to the wild and commonly cultivated trees of the northeastern United States and adjacent Canada*. Small 8vo. pp. vii+184. *figs.* 279. New York: Henry Holt & Co. 1912. \$1.35 in cloth, \$2.50 in leather.

⁴ BOT. GAZ. 42:399. 1906, and BOT. GAZ. 48:472-474. 1909.

trees and those common in cultivation in the northeastern United States and adjacent Canada. The book is free from unnecessary technical terms and descriptive details which are essential to a comprehensive flora, so that the volume can be used easily and intelligently by the layman as well as profitably by the scientifically trained individual. Identification of a given tree is made by a simple key, based on leaf characters, leading directly to the species, which is illustrated by an outline drawing of a typical leaf associated usually with a reproduced photograph in halftone of the bark. Each tree is given its scientific name, as well as the common name by which it is known. The drawings are all made in actual proportions, the natural size being shown graphically by a line-scale accompanying each figure. We need more such books to encourage and popularize careful field observation.—J. M. GREENMAN.

Officinal plants and drugs.—MITLACHER⁵ has brought together in convenient compilation the plants recognized in all of the approved pharmacopoeias, 22 in number. The nomenclature is that of the Vienna Congress, and the sequence is that of WETTSTEIN'S *Handbuch*. The data given are as follows: geographical distribution and culture of medicinal plants, the vegetation form, the drugs obtained, those drugs regarded as especially strong and those recognized as "officinal" in different countries, etc. It is interesting to note the distribution of these 638 officinal plants, representing 125 families. Of the cryptogams, only 23 such plants are used (Phaeophyceae 2, Rhodophyceae 7, Fungi 7, Pteridophytes 7), representing 16 families; while the gymnosperms add only 21 conifers. The 594 officinal plants among angiosperms, representing 107 families, are distributed as follows: Archichlamydeae 323, Sympetalae 197, and Monocotyledons 74.—J. M. C.

Illinois Academy of Science.—The volume of transactions of the fifth annual meeting (February 1912) of the Illinois Academy of Science has just appeared. A symposium on conservation includes "Conservation of our forests," by HENRY C. COWLES, and "Conservation ideals in the improvement of plants," by H. J. WEBBER. In addition to these papers, the following of botanical interest were presented: "Notes on the forests of Ogle County, Ill.," by W. L. EIKENBERRY; "Competition and general relationships among the subterranean organs of marsh plants," by EARL E. SHERFF; "The range of evaporation and soil moisture in the oak-hickory forest association of Illinois," by WADE McNUTT and GEO. D. FULLER; and "Germination and growth of the cottonwood upon the sand dunes of Lake Michigan, near Chicago," by GEO. D. FULLER.—J. M. C.

Volvox.—An extended discussion of *Volvox*, based upon living and fixed material mounted whole in glycerin jelly, is presented in a pamphlet by JANET.⁶

⁵ MITLACHER, WILHELM, *Die officinellen Pflanzen und Drogen*, pp. viii+13. Wien: Carle Fromme. 1912. *M* 6.25.

⁶ JANET, CHARLES, *Le Volvox*. 8vo. pp. 151. *figs.* 15. Limoges: Ducourtieux et Gout. 1912.